

FIGURE 1 - Prior Art

00022T-54534760

16

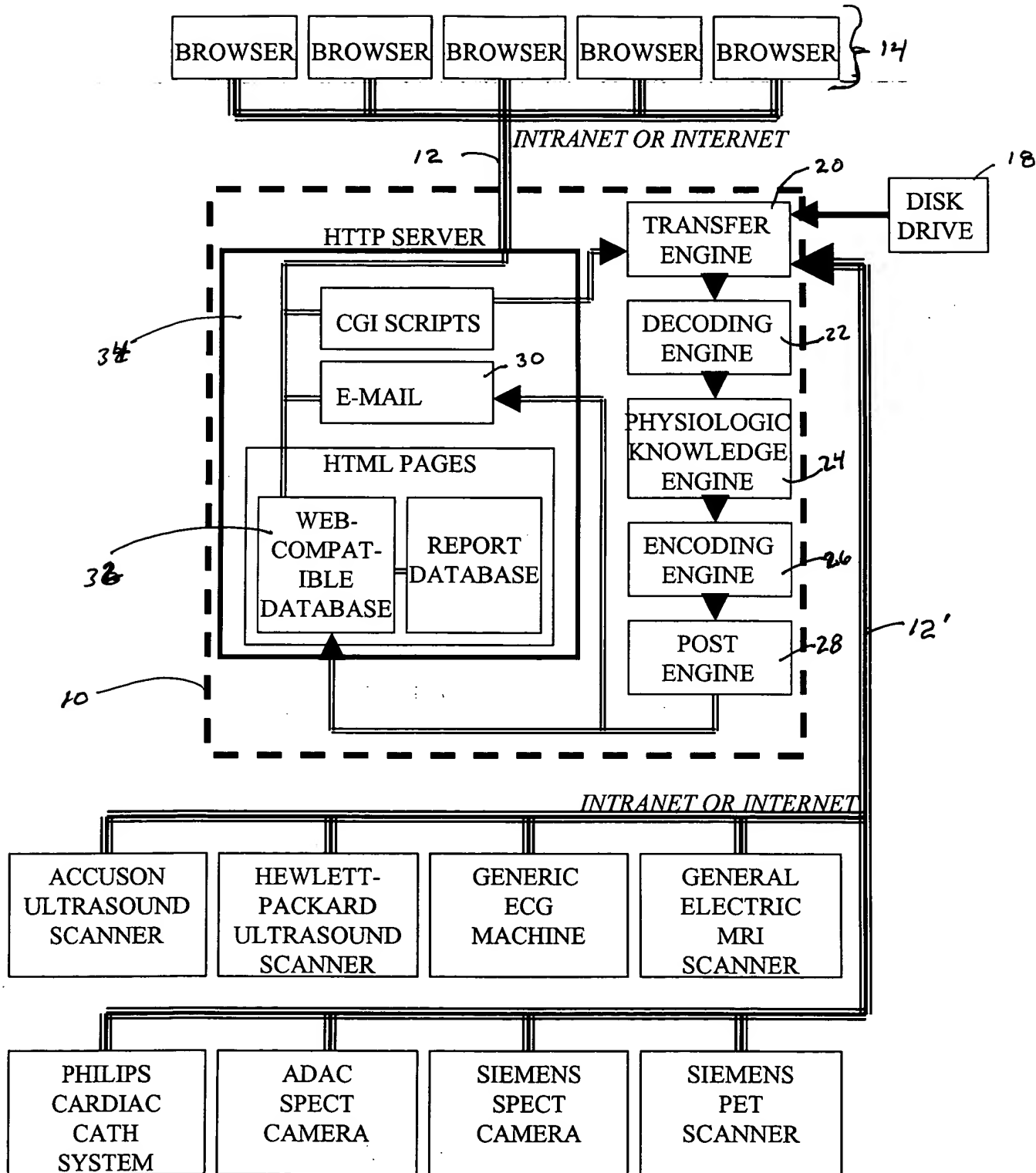


FIGURE 2

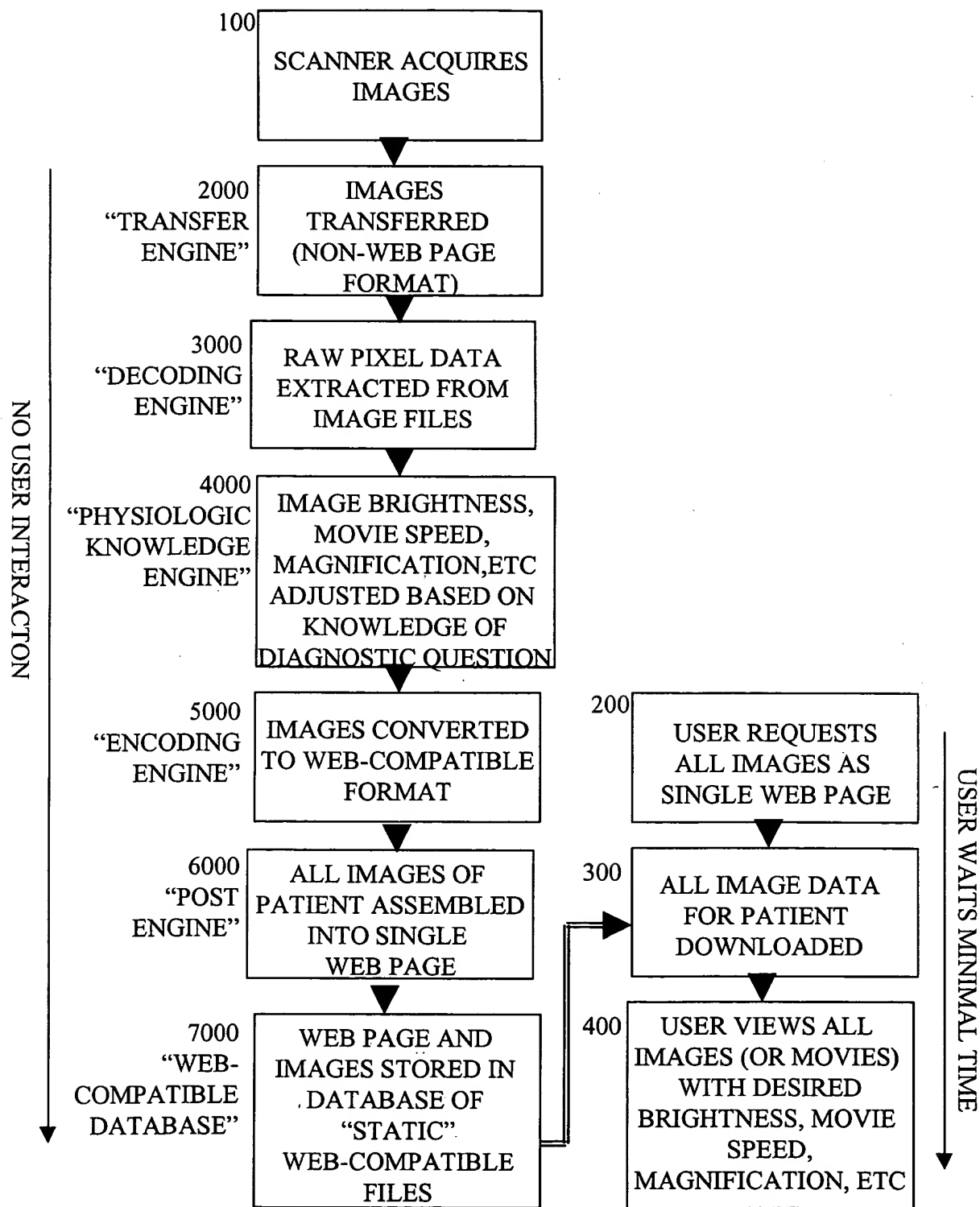
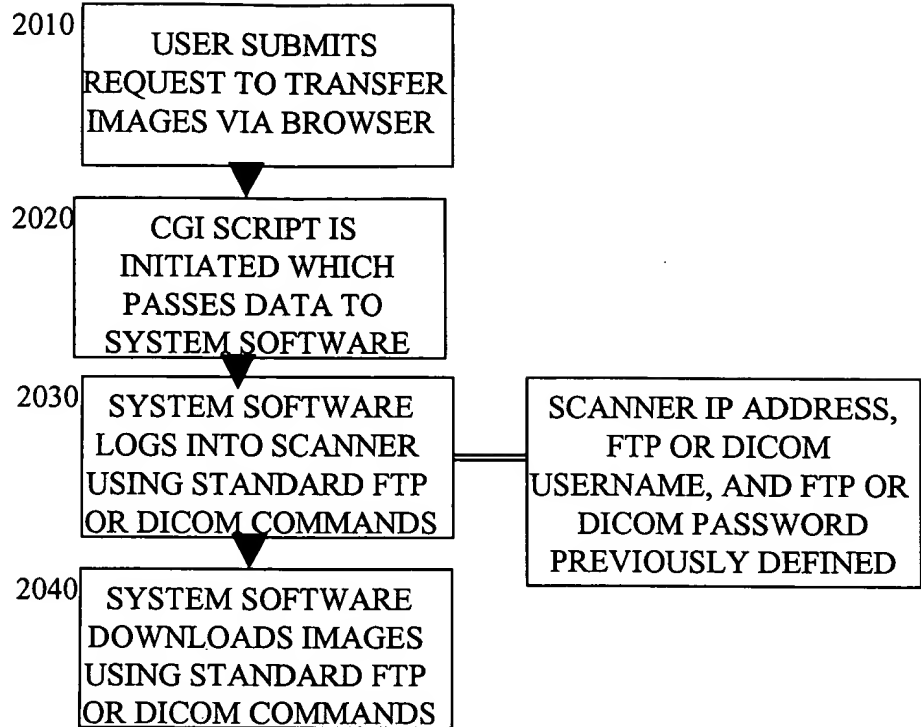


FIGURE 3 - System Overview

Fig. 4a

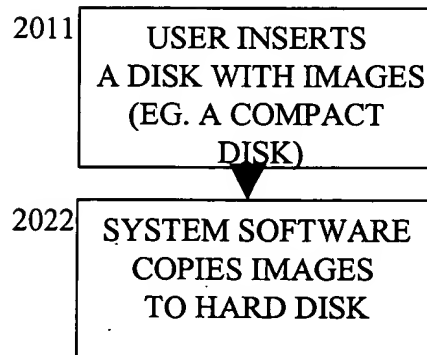
METHOD 1



- OR -

Fig. 4b

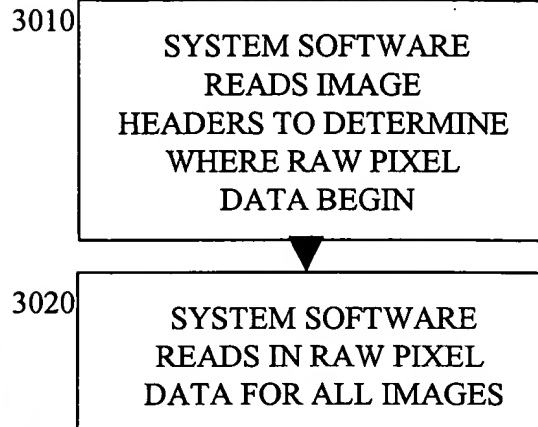
METHOD 2



**FIGURE 4 - STEP 2000 DETAILS
("TRANSFER ENGINE")**

Fig. 5a

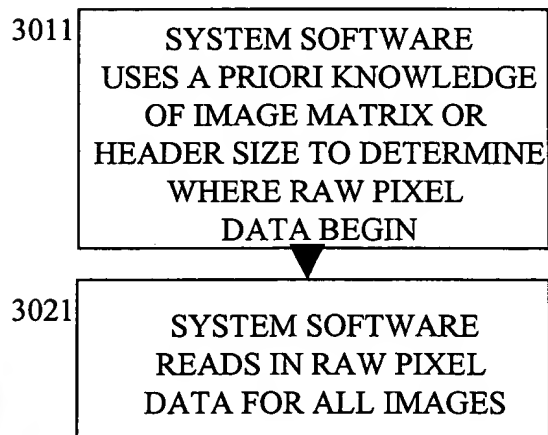
**METHOD 1
FOR "STANDARD"
IMAGE FORMATS
(EG. DICOM)**



- OR -

Fig. 5b

**METHOD 2
FOR
"NON-STANDARD"
IMAGE FORMATS**



**FIGURE 5 - STEP 3000 DETAILS
("DECODING ENGINE")**

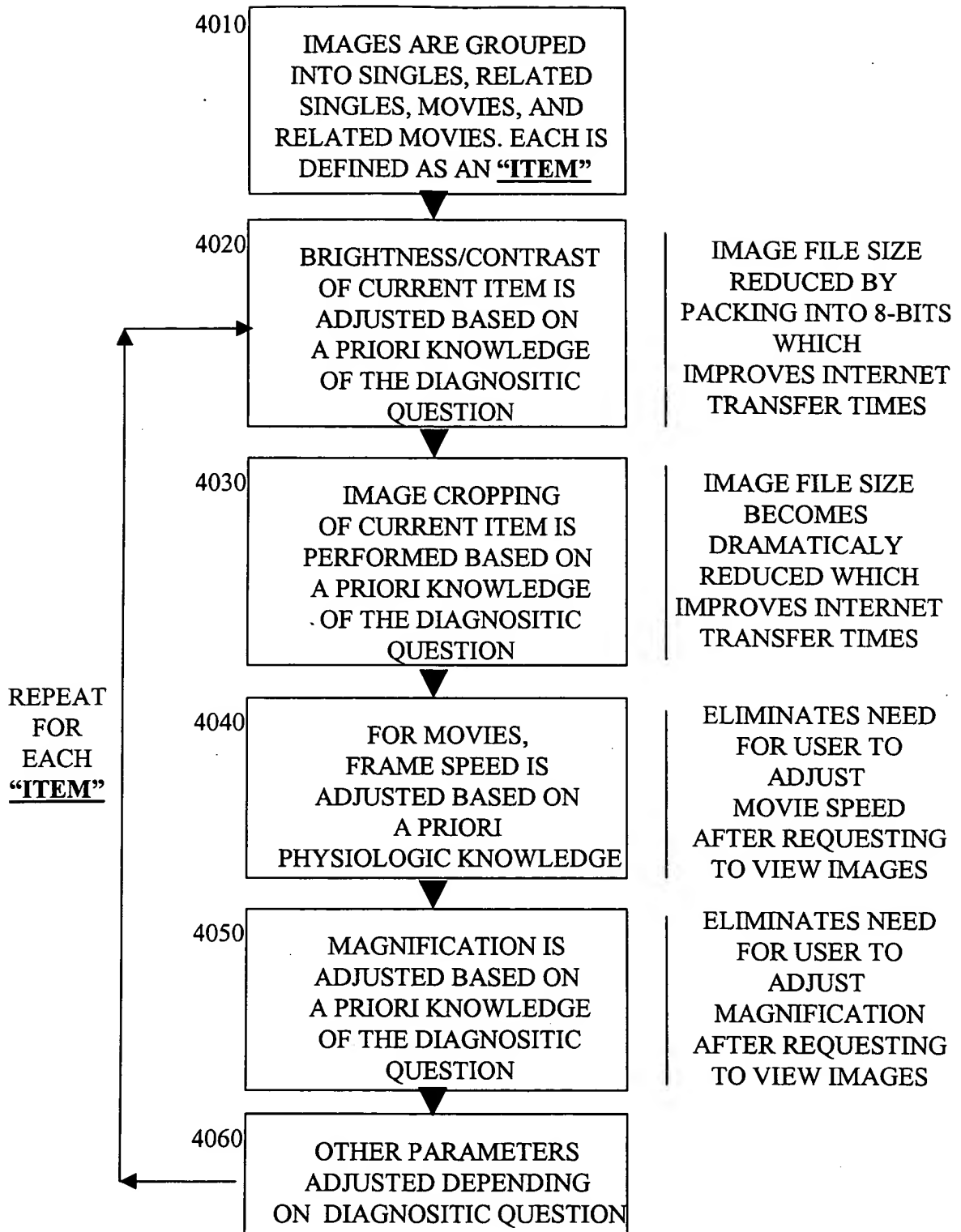


FIGURE 6 - STEP 4000 DETAILS
("PHYSIOLOGIC KNOWLEDGE ENGINE")

STEP 4020 - Define search region as subregion within image which contains the organ of interest (eg. heart) and search all movie frames for the single brightest pixel. Scale all movie frames by same amount to make single brightest pixel equal to 2 to the 8th power minus 1, eg. 255 (1 byte/pixel, 8-bit image).

STEP 4030 - Create thumbnail movies by cropping images such that only the organ of interest is shown (eg. heart).

STEP 4040 - Convert all movie frames into a single movie with frame rate chosen to simulate real time motion (eg. beating heart).

STEP 4050 - Create a full-field-of-view version of each thumbnail so that user can double-click to view additional details.

Fig. 7a



Fig. 7b

Eg. STEP 4040

Thumbnail movie of
beating heart
(16 frames=100KB)



Eg. STEP 4050

Full field-of-
view movie
displayed full
screen when
thumbnail
clicked (16
frames=400KB)



Fig. 7c

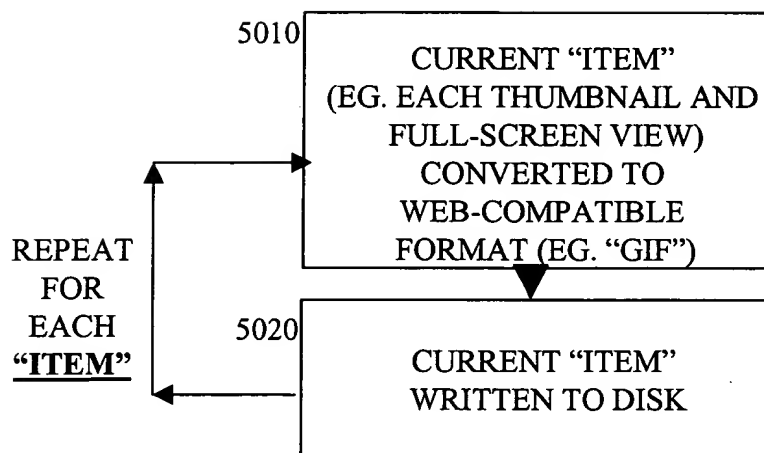


FIGURE 8 - STEP 5000 DETAILS
("ENCODING ENGINE")

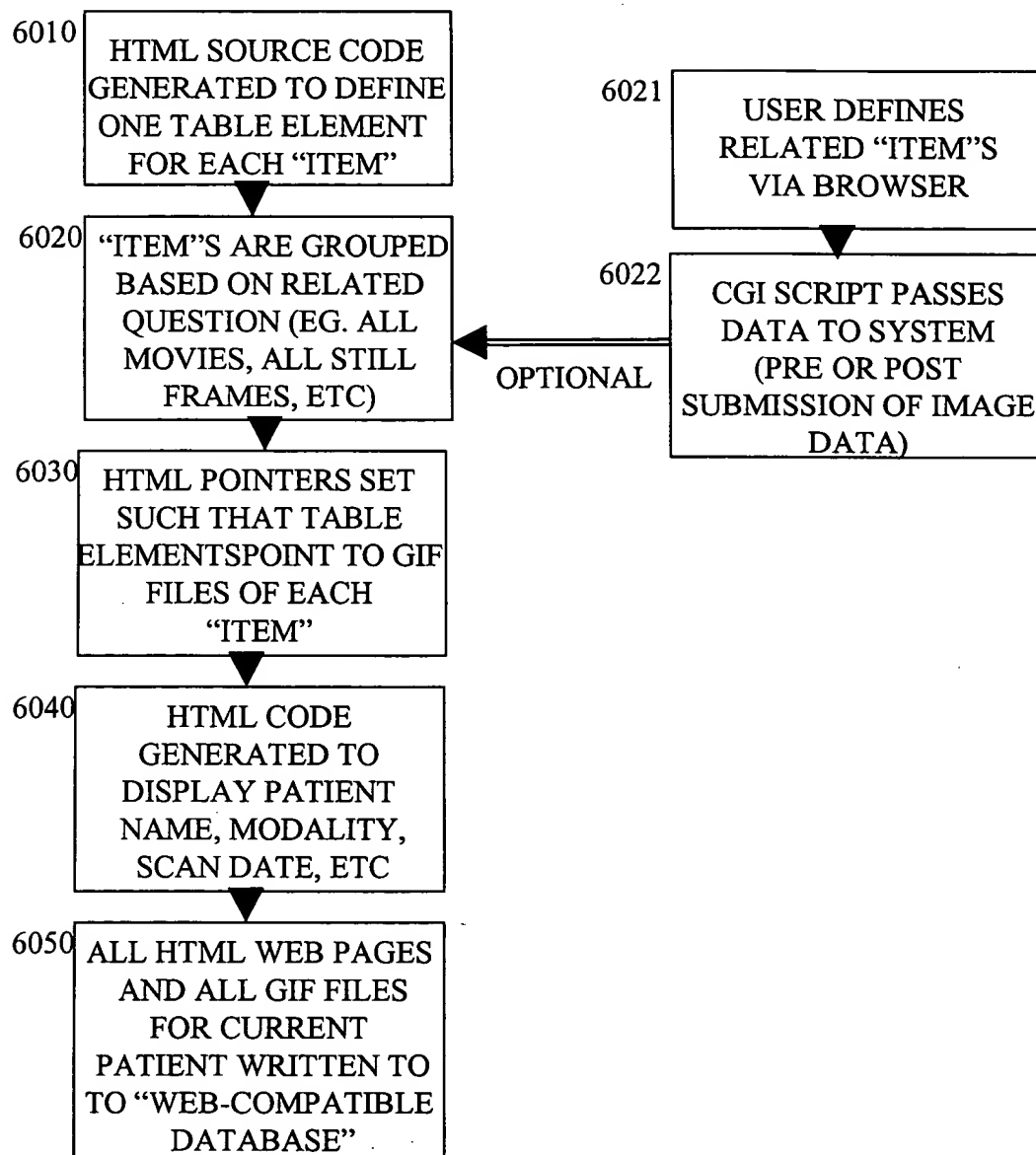
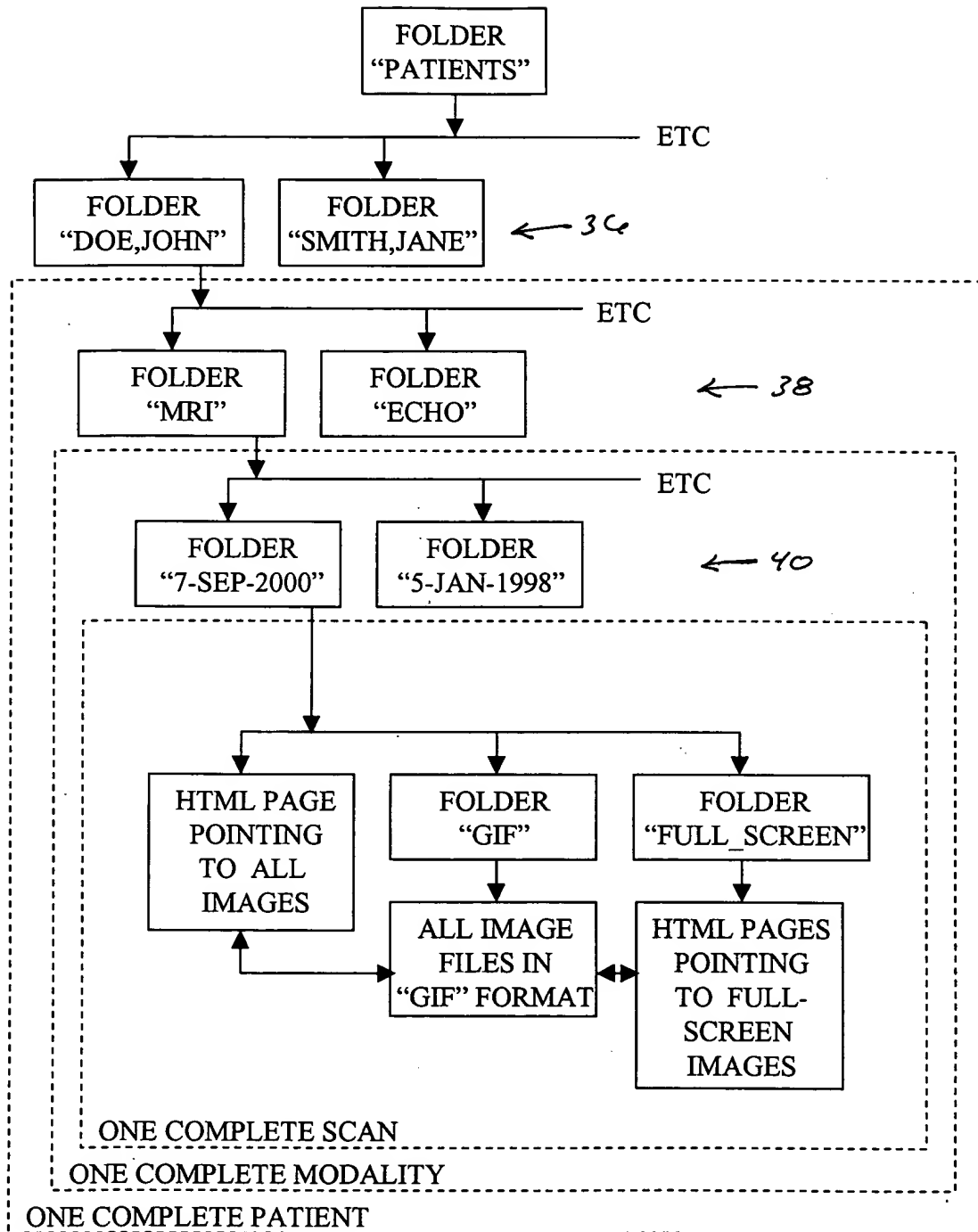


FIGURE 9 - STEP 6000 DETAILS
("POST ENGINE")



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FIGURE 10 - STEP 7000 DETAILS
("WEB-COMPATIBLE DATABASE")

```
graph TD; Root["COMPUTER LOCATED AT  
IP ADDRESS 10.1.0.0  
RECEIVES ALL IMAGE REQUESTS  
FOR EARTH. CGI SCRIPT RUNNING ON  
THIS COMPUTER SEARCHES REQUESTED ADDRESS  
AND ROUTES REQUEST TO APPROPRIATE COUNTRY"]; Root --> USA["USA  
COMPUTER  
LOCATED  
AT 10.1.1.0"]; Root --> Europe["EUROPE  
COMPUTER  
LOCATED  
AT 10.1.2.0"]; Root --> Japan["JAPAN  
COMPUTER  
LOCATED  
AT 10.1.3.0"]; Root --> ETC1["ETC"]; USA --> US1["COMPUTER  
LOCATED  
AT 10.1.1.1  
STORES  
IMAGES FOR  
SOCIAL  
SECURITY  
NUMBERS  
000-00-0000  
THROUGH  
099-99-9999"]; USA --> US2["COMPUTER  
LOCATED  
AT 10.1.1.2  
STORES  
IMAGES FOR  
SOCIAL  
SECURITY  
NUMBERS  
100-00-0000  
THROUGH  
199-99-9999"]; USA --> US3["COMPUTER  
LOCATED  
AT 10.1.1.3  
STORES  
IMAGES FOR  
SOCIAL  
SECURITY  
NUMBERS  
200-00-0000  
THROUGH  
299-99-9999"]; USA --> ETC2["ETC"]; US1 --> Internet["ALL US HOSPITALS  
SUBMIT  
WEB-PAGE  
BASED IMAGES  
OVER THE  
INTERNET"]; US2 --> Internet; US3 --> Internet; Internet --> Users["DEDICATED 'DUMB'  
STORAGE COMPUTERS  
DOWNLOAD IMAGES  
TO USERS  
OVER INTERNET"]; style Root fill:#fff,stroke:#000; style USA fill:#fff,stroke:#000; style Europe fill:#fff,stroke:#000; style Japan fill:#fff,stroke:#000; style US1 fill:#fff,stroke:#000; style US2 fill:#fff,stroke:#000; style US3 fill:#fff,stroke:#000; style Internet fill:#fff,stroke:#000; style Users fill:#fff,stroke:#000;
```

The flowchart illustrates the system architecture. At the top, a central computer (IP 10.1.0.0) receives all image requests and routes them to country-specific computers (USA, Europe, Japan, etc.). Each country's computer then routes requests to dedicated storage computers (e.g., 10.1.1.1, 10.1.1.2, 10.1.1.3 for the USA) that store images for specific Social Security number ranges. These storage computers are connected to a common Internet backbone. All US hospitals submit web-page based images over the Internet to this backbone. Dedicated "dumb" storage computers then download images from the backbone to users over the Internet.

FIGURE 11 - STRUCTURE OF WORLD-WIDE DATABASE

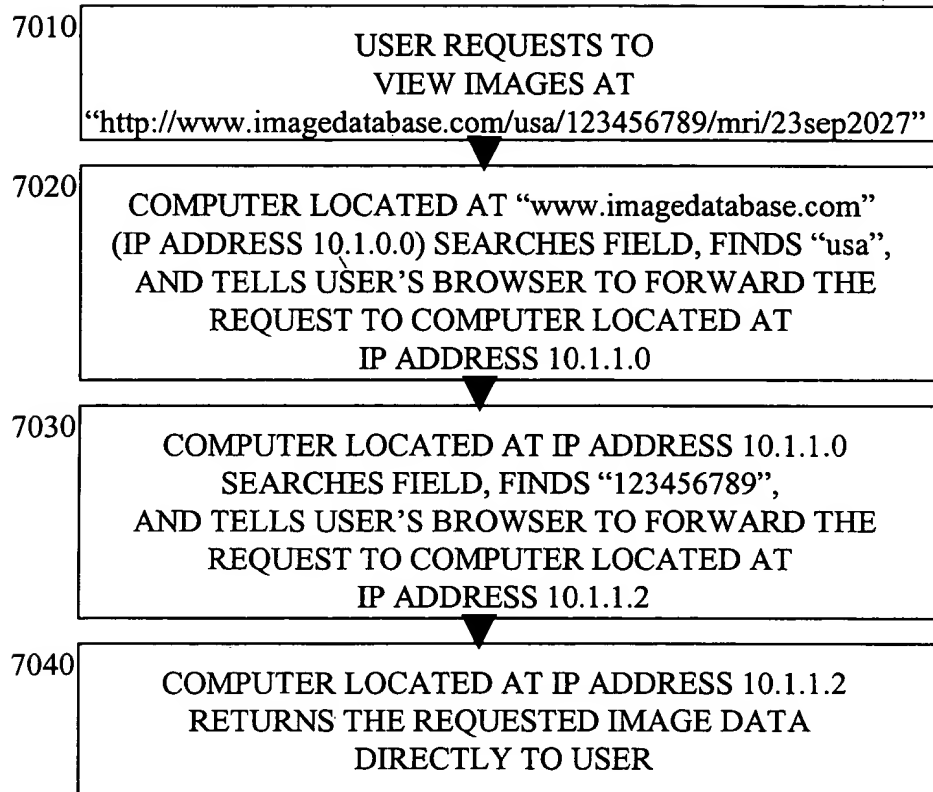


FIGURE 12 - PROCESSING USER REQUEST
USING WORLD WIDE DATABASE

File Edit View Go Favorites Window Help 11:11 PM Internet Explorer 4.5

Directory Listing of accounts:feinberg:patient...

Back Forward Stop Refresh Home Favorites History Search AutoFill Larger Smaller Print Mail Preferences

Address: http://128.253.28.29/accounts/feinberg/patients/Doe,John/

Live Home Page Apple Computer Apple Support Apple Store Microsoft MacToys MSN Office for Macintosh Internet Explorer

Directory Listing of: accounts:feinberg:patients:Doe,John

5 items	Name	Size	Modification Date
	Cath ← 42	-	Wed, 07 Jun 2000 22:23
	ECG	-	Wed, 07 Jun 2000 22:23
	Echo	-	Wed, 07 Jun 2000 22:23
	MRI	-	Wed, 07 Jun 2000 22:23
	SPECT	-	Wed, 07 Jun 2000 22:23

40 ✓

Internet zone

FIGURE 13

09742575 122000

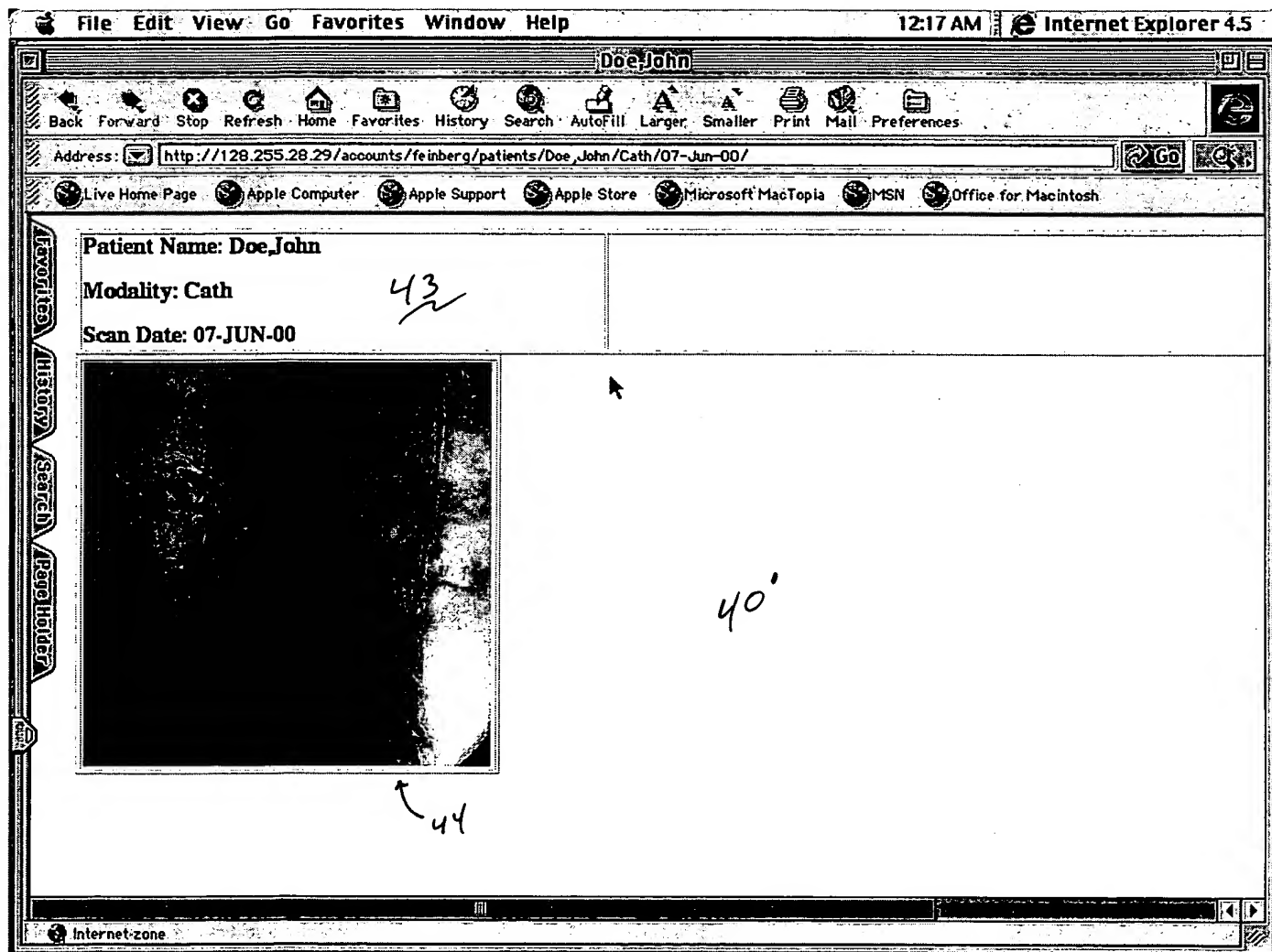


FIGURE 14

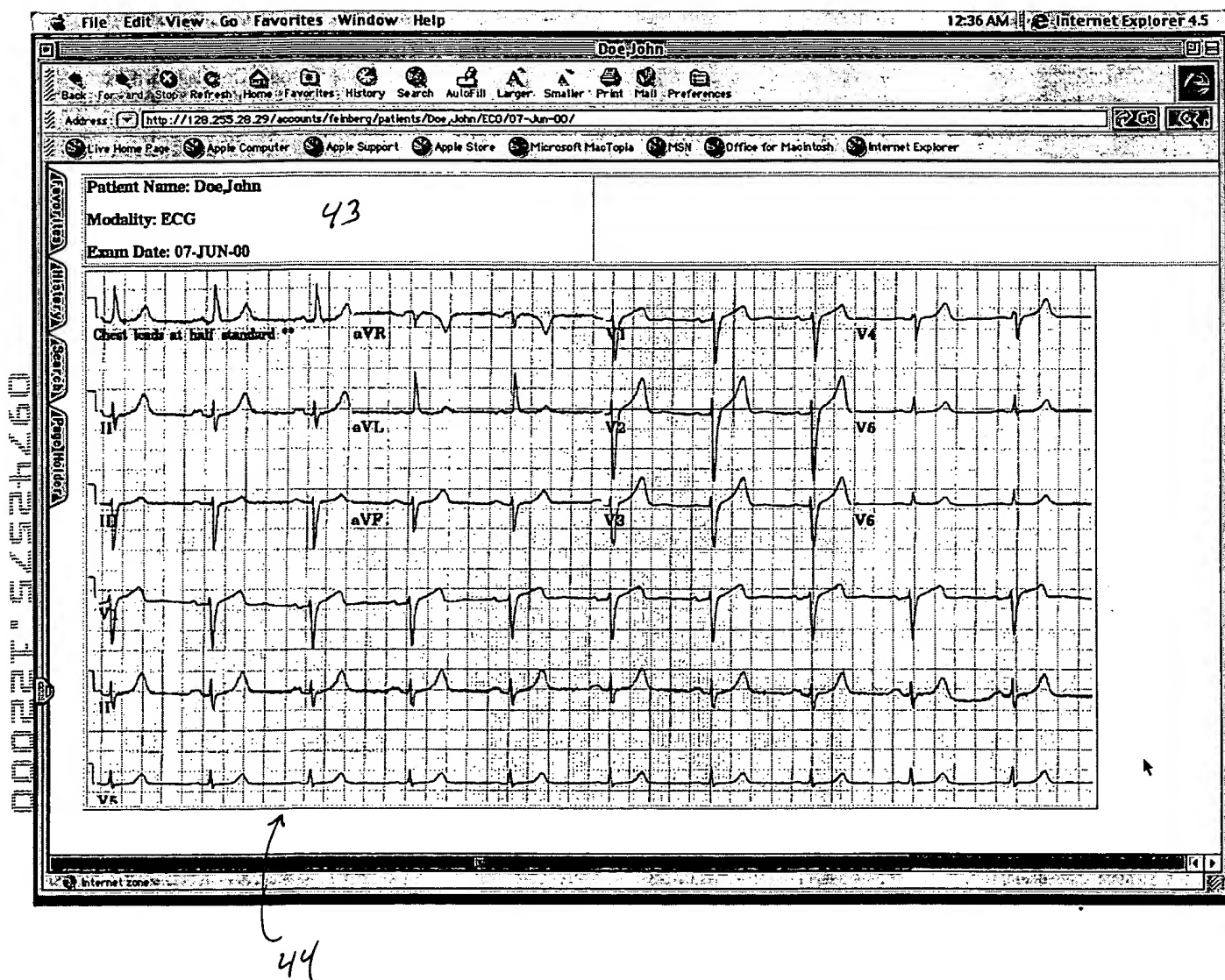


FIGURE 15

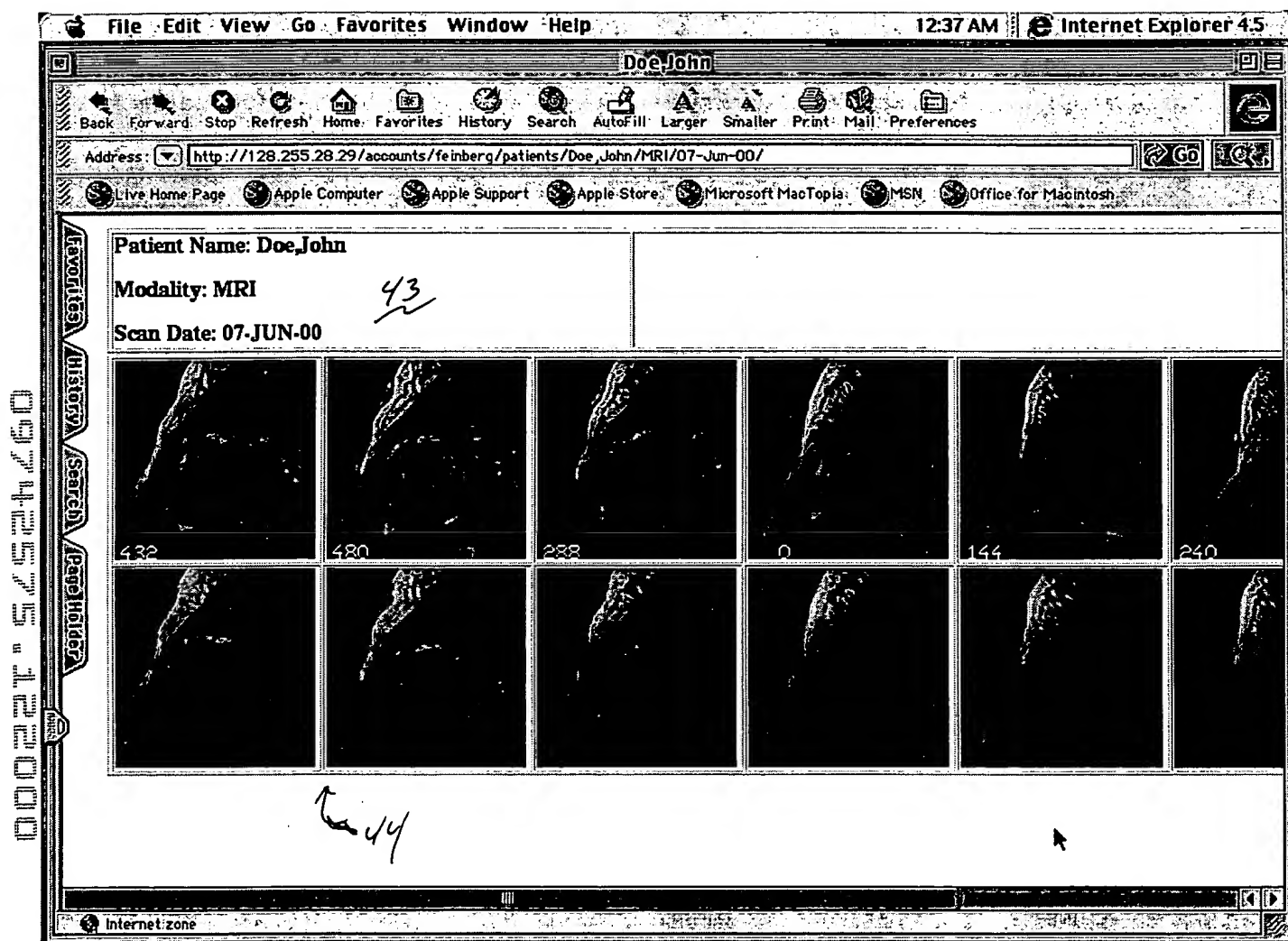


FIGURE 16

0942575.122000

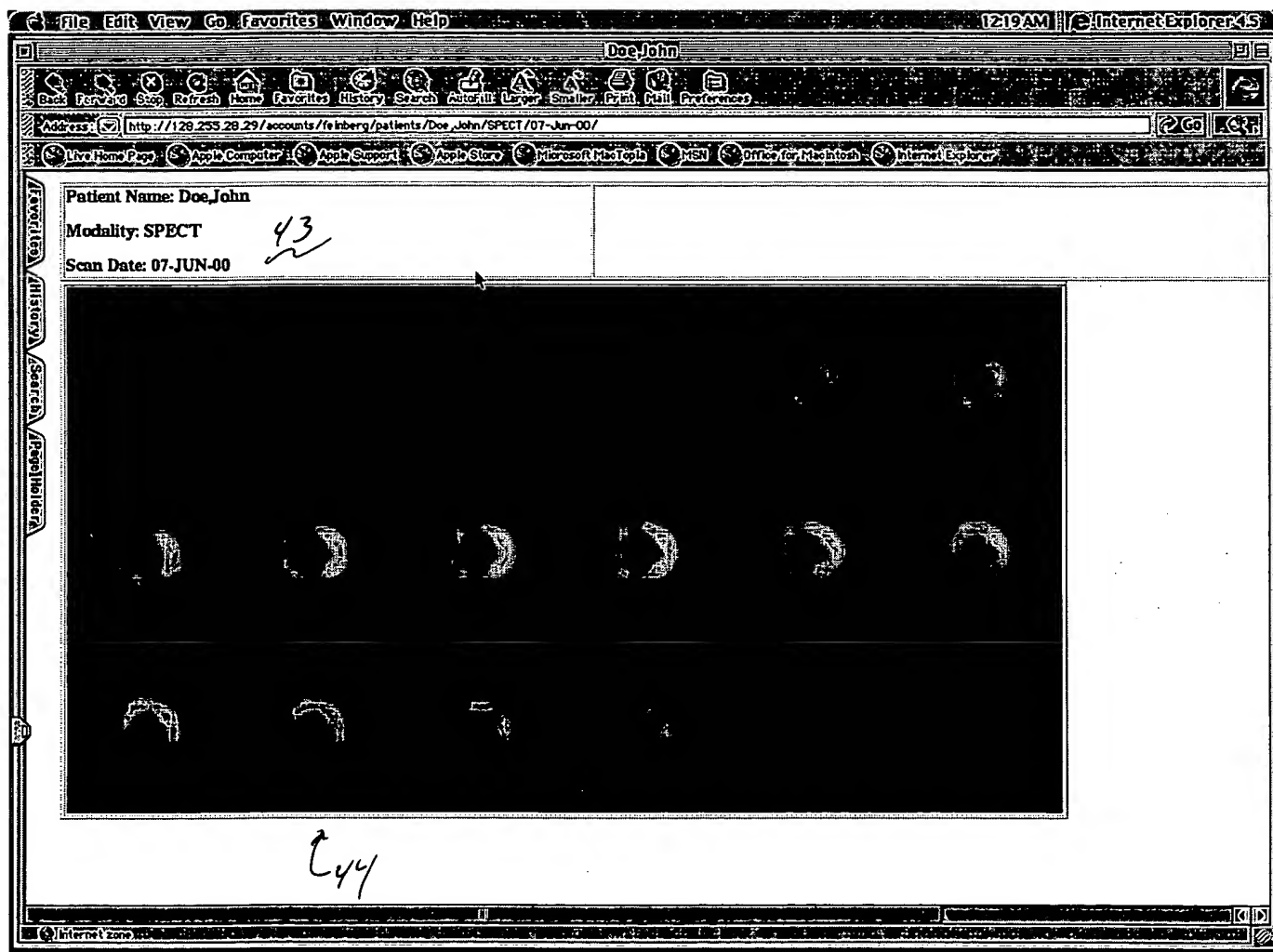


FIGURE 17